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ABSTRACT

A study examined the effectiveness of an integrated language arts instructional format for teaching reading compared with the effectiveness of the typical traditional reading program. The study investigated the effectiveness of approaches that are representative of both viewpoints of the reading process (i.e., word recognition and the construction of meaning) with fourth- and fifth-grade students who, based on their Total Normal Curve Equivalent scores on the Iowa Tests of Basic Skills (ITBS), exhibited severe reading problems. Subjects were 123 randomly selected students (50 from grade 4 and 80 from grade 5) from a public school system in a small southern town. Of these 123 students, 25 fourth graders and 40 fifth graders were randomly assigned to either the experimental or the control group. Both groups were administered the Interest Reading Inventory (IRI), the Slosson Oral Reading Test (SORT), and the Analytical Reading Inventory (fifth edition) (ARI), Narrative and Expository. Results indicated that the integrated language arts format for reading instruction increased reading comprehension performance and had no significant effect on word recognition performance. Also a relation was found between scores on the DSI and word-recognition performance; however, no relation was found between Dyslexia Screening Instrument (DSI) scores and reading comprehension. Findings suggest that teaching students how to use a variety of comprehension and vocabulary strategies as well as how to monitor their own learning may equip them with effective tools for constructing meaning. (Contains 14 references and 8 tables of data.) (CR)

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EFFECTS OF AN INTEGRATED FORMAT FOR READING INSTRUCTION ON THE COMPREHENSION AND WORD-RECOGNITION PERFORMANCE OF FOURTH- AND FIFTH-GRADE STUDENTS WHO EXHIBIT SEVERE READING PROBLEMS

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EFFECTS OF AN INTEGRATED FORMAT FOR READING INSTRUCTION ON THE COMPREHENSION AND WORD-RECOGNITION PERFORMANCE OF FOURTH- AND FIFTH-GRADE STUDENTS WHO EXHIBIT SEVERE READING PROBLEMS

Introduction

> To be able to read and write effectively are vital skills in today's complex, high-tech society, and children with disabilities in these areas are penalized heavily. We know that early intervention with diagnosis and remediation can correct many problems. (Putnam, 1996, p. iii)

Over the years, a variety of theories regarding the nature of reading disability have evolved. Early diagnoses were based on neurological dysfunction caused by disease, brain injury, or defective development (Thompson, 1969). In the early 1900s Samuel T. Orton coined the term dyslexia to explain the inability to read, which he hypothesized to be caused by incomplete cortical dominance--the inability of the left hemisphere to maintain dominance over the right hemisphere with regard to language functions (Orton, 1937). From the 1950s until the 1970s reading disability was noted to be associated with a variety of causal factors including limited intellectual capacity, educational disadvantage, cultural deprivation, and most recently, organically-based impairment (Walmsley & Allington, 1995).

Since the Education of Handicapped Children Act of 1975 codified the rights of all handicapped children including the learning disabled and dyslexic, the special education population has skyrocketed. According to Walmsley and Allington (1995), more emphasis has been placed on labeling students and placing them in programs than on researching critical instructional issues in an effort to determine approaches that are most appropriate for teaching students who are deficient in reading.

Over the years, two very different views of the reading process have evolved from within the reading community. These views influence instruction for all students as well as for those identified as learning disabled or dyslexic. The basic controversy between the two viewpoints lies in how "proficient reading" is conceptualized. One view maintains that proficient reading consists of identifying words fluently (Orton, 1966; Stanovich, 1991). The opposing view insists that proficient reading consists of constructing meaning (i.e., reading is an interaction between the

reader & the text and for the purpose of constructing meaning from print) (Smith, 1986; Weaver, 1994a, 1994b).

Remedial reading instruction has typically focused on the word-recognition view of reading (Pearson as cited in Smith, 1994), often placing more responsibility on an already weak area (Weaver, 1994b). Many basal series programs also give priority to instruction in phonics and decoding (Routman, 1988). According to McGill-Franzen and Allington (1991), this instructional format does little to encourage students to reach their potentials as readers. The word-recognition viewpoint suggests that students who experience difficulty in learning to read (i.e., the learning disabled or dyslexic) exhibit some type of language processing problem which manifests itself in receptive and/or expressive language deficiencies.

According to Project Literacy US, 1987 (PLUS), (as cited in Routman, 1988) more than 23 million Americans cannot read and write sufficiently; in some urban high schools the drop-out rate is above 50%; and "one-third of all adult Americans lack the communication skills they need to function productively" (p. 15). Routman suggests that teachers need to change the way they teach.

Based on a review of the literature, the need for a study designed to examine the effectiveness of instructional approaches for teaching reading to those students identified as having reading problems appears to be warranted. An examination of the effectiveness of instructional approaches is especially important because students who have reading problems are often labeled as learning disabled or dyslexic.

This study investigated the effectiveness of approaches that are representative of both viewpoints of the reading process (i.e., word recognition & the construction of meaning) with fourth- and fifth-grade students who, based on their Total Normal Curve Equivalent scores on the Iowa Tests of Basic Skills (ITBS), exhibited severe reading problems. The purpose of this study was to examine the effectiveness of an integrated language arts instructional format for teaching reading compared with the effectiveness of the typical, traditional reading instruction.

Specifically, this study was designed to address the following questions:

1. What is the difference between an integrated instructional format and typical, traditional reading instruction for teaching both narrative and expository reading as measured by comprehension and word-recognition scores of fourth- and fifth-grade students who exhibit severe reading problems?

2. Is there a relationship between scores on the Dyslexia Screening Instrument (DSI) and the comprehension

and word-recognition abilities of fourth- and fifth-grade students who are experiencing reading problems related to narrative and expository text?

Methods

The subjects in this study were 123 students enrolled in the fourth and fifth grade for the academic school year 1996-97 in a public school system in a small southern town. The subjects consisted of students who exhibited severe reading problems as defined by their Total Normal Curve Equivalent Scores on the Iowa Tests of Basic Skills. The scores indicated the students were functioning at least one year below grade level. For the purpose of this study, the sample did not include students of EMR or TMR ruling.

The subjects were selected in the following manner: All fourth- and fifth-grade teachers in the selected schools were asked to submit names of students whose Total Normal Curve Equivalent Scores on the ITBS, which was administered in October 1996, placed them one or more years below grade level in reading performance. From this group, 130 students (50 fourth graders & 80 fifth graders) were randomly selected to participate in this study. Of the 130 students, 25 fourth graders and 40 fifth graders were randomly assigned to the each of the two treatment groups (i.e., experimental group & control group).

Students in the experimental and control groups were administered the following informal assessments as pre- and posttests measures:

1. the Interest Reading Inventory (IRI),
2. the Slosson Oral Reading Test (SORT), and
3. the Analytical Reading Inventory (5th ed.)(ARI), Narrative and Expository.

The instruments for measuring word recognition and reading comprehension and those for identifying reading attitudes and interests as well as the cluster of characteristics generally associated with dyslexia consisted of the following items:

1. The Slosson Oral Reading Test (SORT) is a test of word recognition; it yields an estimate of a student's reading grade level based on his or her ability to recognize sight words. This informal assessment tool does not assess comprehension nor does it assess the ability to recognize words in context. The SORT consists of nine word lists (200 words total) which correspond to grades primer through high school. A conversion table, which accompanies the

instrument, provides an estimated grade level for reading words in isolation based on a student's raw score.

The words on the SORT have been taken from standardized school readers, and the estimated reading level obtained from testing, represents median or standardized school achievement. A correlation of .96 (variability on a group of 108-children from first grade through high school: Gray Mean = 5.0, SORT Mean = 5.0; Gray SD = 2.0, SORT SD = 2.3) was obtained with the Standardized Oral Reading Paragraphs by William S. Gray. A reliability coefficient of .99 (test-retest interval of one week) shows that the SORT can be used at frequent intervals to measure a child's progress in reading, providing no specific coaching with these particular words has been given.

2. The Analytical Reading Inventory (ARI) is an informal assessment instrument used to evaluate the student's independent, instructional, and frustration reading levels and his or her strengths and weaknesses in oral and silent reading as well as comprehension skills with both narrative and expository texts. Expository passages deal with social studies and science topics. Estimated reading levels are reported according to three levels of functioning which are the independent reading level (i.e., the level at which the student can read with no more than one uncorrected miscue in each 100 words (99%) and with at least 90% comprehension), the instructional reading level (i.e., the level at which the student can read with no more than five uncorrected miscues in 100 words (95%) and with at least 75% comprehension), and the frustration level (i.e., the level beyond which reading has little meaning).

Grade level validation of the reading level of each passage of the ARI was established through the use of readability formulas and computer analyses of the text. Readability for the ARI has been determined to be appropriate for both narrative and expository passages through the use of the revised Spache formula (primer through grade 3) and the Harris-Jacobson formula 2 (levels 4 through 9).

3. The Interest Reading Inventory (IRI) is an informal assessment instrument used to determine individual attitudes and interests toward reading.

4. The Dyslexia Screening Instrument (DSI) is an informal rating scale designed to be used in the school setting with students in grade 1 through grade 12 for the purpose of describing a cluster of characteristics associated with dyslexia and for discriminating between students who display these characteristics and students who do not.

The DSI is a rating scale that can be used to screen entire populations of students or individual students who exhibit difficulties in the areas of reading, spelling, writing, or language processing. Scoring is completed using the

Scoring Program Software which classifies each score as passed, failed, inconclusive, or cannot be scored. This instrument can be used to provide part of the documentation that is required by Section 504 of the Rehabilitation Act of 1973 and the Individuals with Disabilities Education Act (IDEA).

The reliability of the DSI was assessed by determining the homogeneity of the statements (internal consistency) and the consistency of ratings across examiners (interrater reliability). The reliability coefficients were obtained using Cronbach's coefficient alpha. Internal consistency reliability coefficients and standard errors of measurement for use with elementary students are (N=172, Mean=10.0, SD= 2.8, r=0.99, and SEM=0.28).

Interrater reliability on the DSI was evaluated using 27 elementary students who were suspected of being at risk for dyslexia and who had multiple teacher ratings on the instrument. The correlation between scores was .86 with 100% agreement on classification.

The validity of the DSI was assessed by determining how well the instrument measures the characteristics of dyslexia (content validity), differentiates between students with a cluster of characteristics associated with dyslexia and those without (construct validity), and predicts diagnosis of dyslexia (predictive validity). The DSI's content validity is based on an extensive review of relevant literature and on contributions of experts in the fields of dyslexia. Construct validity is supported by the discriminant analysis classifications done in the development phase of the instrument as well as by two other studies, one that involved high-performing students and one that involved students with Attention Deficit Disorder.

5. Iowa Tests of Basic Skills (ITBS) are standardized achievement tests that measure general cognitive skills in the areas of Listening, Word Analysis, Vocabulary, Reading Comprehension, Language, and Thinking Skills, for students in grades four-nine. The reliability coefficients range from .70-.90. Most of the internal-consistency reliability coefficients are above .85.

The experimental group received reading instruction using an integrated instructional format. The control group received the typical, traditional classroom reading instruction. The instructional methodology for the treatment groups consisted of the following instructional materials and teacher preparation:

The teachers using an integrated instructional format were preservice teachers (i.e., college students in their last semester of teacher-education course work) enrolled in a practicum course which emphasizes the diagnosis and

correction of reading difficulties for the classroom teacher. Each preservice teacher was responsible for instructing only one student. The fourth- and fifth-grade students who were assigned to the experimental group were instructed on a one-on-one tutorial basis for 50 minutes twice a week for approximately 10 weeks. The preservice teachers instructed their students using children's literature and followed the integrated format lesson plan which integrates reading, writing, listening, and speaking in a literary context that addresses the students' strengths and weaknesses. Three reading strategies--reciprocal teaching, semantic mapping, and explicit teaching--were used in addressing vocabulary development and reading comprehension. Phonics, sight words, and other word-recognition strategies were taught in the context of printed texts only.

Lesson plans using the integrated instructional format were prepared by the preservice teachers. Prior to their use, all lesson plans were evaluated and improved, if need be, by graduate students of reading to ensure fidelity of instruction. Preservice teachers were trained in strategy teaching and the use of an integrated language arts instructional format by the course instructor of record.

Basal readers were not used for the integrated format lessons and neither was there a deliberate effort to control vocabulary in reading materials. (During each lesson, preservice teachers read to their students using children's literature that was appropriate for fourth and fifth graders and was representative of the various genres was used.

Students in the experimental group were given multiple opportunities to write in the various genres. Journal writing, student-made books, and written responses to literature were regular components of the integrated format lessons.

The experimental group received the typical, traditional reading instruction provided by their regular classroom teachers the remaining three days of each week. Specifically, they received reading instruction using a one-on-one integrated format two mornings a week and the typical, traditional reading instruction taught by their regular classroom teachers three mornings a week.

Students in the control group received the typical, traditional reading instruction which consisted of a 50 minute lesson each morning taught by their regular classroom teachers. The control group's lessons were teacher directed and consisted of small-group (4-7 students) instruction. Each lesson followed a format typical of the directed-reading approach found in the basal reader (i.e., lessons were systematic, sequential, gradually increased in difficulty,

and consisted of a variety of procedures for teaching vocabulary, word recognition, & comprehension as well as encouraging reading enjoyment). Instruction focused on explanations, discussions, and review of isolated reading skills. Ancillary materials, such as supplemental practice exercises and workbooks that accompany the basal series, were used as the lessons directed. For the purpose of this study, the classroom teachers followed verbatim the teacher's guides that accompany the basal series.

The experimental group and the control group received reading instruction concurrently. The duration of treatment for this study was approximately 10 weeks.

The procedure for data collection in this study followed a pretest/posttest design. The pre- and posttests included the following informal reading assessment instruments: (a) the IRI, (b) the SORT, and (c) the ARI. Administration of these instruments was conducted by preservice teachers preceding and following the ten weeks of treatment. Preservice teachers were assigned two students each to pre- and posttest (i.e., assess the same two students for pre- & posttesting) and were trained to administer the informal reading assessment instruments by the course instructor of record.

Three forms of the ARI, Form "B" to assess comprehension abilities related to silent reading of narrative passages, Form "C" to assess comprehension of oral reading of narrative passages as well as miscue analysis, and Form "SS," which deals with social studies topics, to assess comprehension of silent reading of expository passages, were administered as part of the pretest.

Posttesting using the ARI consisted of Form "A" to assess silent reading of narrative passages and Form "S," which deals with science topics, to assess silent reading of expository passages. The DSI was completed for each of the students in the experimental and control groups by their respective classroom teachers.

Hypotheses were tested by applying the following statistical procedures: a one-way analysis of covariance (ANCOVA), a multivariate analysis of covariance (MANCOVA), univariate analyses of covariance, and a Pearson product-moment correlation of coefficient. The .05 alpha level was used for all calculations. The ITBS scores were used as the covariate.

Results

For the purpose of this study, several analyses were conducted. The following four null hypotheses were tested:

H_1 There will be no significant difference between the experimental group and the control group in their comprehension scores on both narrative and expository texts as measured by the Analytical Reading Inventory.

H_2 There will be no significant difference between the experimental group and the control group in their word-recognition scores as measured by the Slosson Oral Reading Test.

H_3 There will be no significant relation between students' scores on the Dyslexia Screening Instrument and their comprehension performance as measured by the Analytical Reading Inventory.

H_4 There will be no significant relation between students' scores on the Dyslexia Screening Instrument and their word-recognition performance as measured by the Slosson Oral Reading Test.

The first hypothesis assessed the effectiveness of using an integrated language arts format for reading instruction on reading comprehension performance. A multivariate one-way analysis of covariance was used to compare the two treatment groups (i.e., integrated language arts format & traditional reading instruction) with regard to reading comprehension. Group differences in reading comprehension performance were calculated according to four comprehension areas (i.e., main idea, factual, terminology, & cause & effect) using two text types (i.e., narrative & expository). A summary of the multivariate one-way analysis of covariance for analyzing the total reading comprehension performance (i.e., combined reading comprehension areas) using silent narrative text by groups is shown in Table 1. ITBS scores were used as the covariate on all analyses.

Table 1

Summary of (MANCOVA)--Silent Narrative Reading Comprehension Performance by Group

Source	df	F	p	Effect Size
ARI (Narrative Text)				
	4/114	9.01	.000*	.240

The multivariate one-way analysis of covariance comparing overall comprehension performance on narrative text between the treatment groups resulted in rejection of hypothesis H_1 indicating a moderately strong effect ($p < .001$). To determine the specific variables (i.e., comprehension areas) on which the groups differed, univariate one-way analyses of covariance were conducted. A summary of the univariate analyses of covariance is presented in Table 2.

Table 2

Summary of Univariate Analyses of Covariance--Specific Comprehension Areas (Silent Narrative Text)

Source	MS_A	MS_w	F	p	Eta^2
Cause/effect	9730.05	619.58	15.70	.000**	.118
Factual	3318.53	534.63	6.21	.014*	.050
Main idea	5290.33	1270.28	4.16	.044*	.034
Terminology	21140.23	666.80	31.70	.000**	.213

df = 1, 117 for each variable
* $p < .05$
** $p < .01$

The univariate analyses revealed significant differences between the treatment groups with regard to all four comprehension areas--cause/effect $F(1, 117) = 15.70$, $p < .05$; factual $F(1, 117) = 6.21$, $p < .05$; main idea $F(1, 117) = 4.16$, $p < .05$; and terminology $F(1,117) = 31.70$, $p < .05$.

The mean scores for specific comprehension areas by groups are presented in Table 3.

Table 3

Comparison of Means--Specific Comprehension Areas (Silent Narrative Text

Source	Est. Mean	Adj. Mean	SD
Cause/effect			
Experimental	43.90	44.10	26.4
Control	26.28	26.08	24.58
Factual			
Experimental	47.32	47.56	25.83
Control	37.26	37.26	23.21
Main idea			
Experimental	55.02	55.25	38.11
Control	42.19	41.96	34.46
Terminology			
Experimental	47.34	47.40	27.71
Control	20.88	20.82	24.36

Next, a multivariate one-way analysis of covariance was performed to compare the treatment groups' overall comprehension performances on expository text. ITBS scores were used as the covariate. A summary of this multivariate one-way analysis of covariance is presented in Table 4.

Table 4

Summary of MANCOVA--Silent Expository Reading Comprehension Performance by Group

Source	df	F	p	Effect Size
ARI (Expository Text)	4/114	4.02	<.005	.124

Results of this multivariate analysis indicated moderately strong treatment effect, ($p < .005$). To determine the particular variables on which the groups differed, univariate analyses of covariance were carried out for each of the variables. A summary of the univariate analyses of covariance for assessing the effect of an integrated language arts format for reading instruction on specific comprehension areas using expository text is presented in Table 5.

Table 5

Summary of Univariate Analyses of Covariance--Specific Comprehension Areas (Silent Expository Text)

Source	MS_h	MS_e	F	p	Eta^2
Cause/effect	8856.46	583.85	15.17	.00**	.12
Factual	1309.13	504.64	2.59	.11	.02
Main idea	6271.51	1462.35	4.29	.04*	.04
Terminology	379.71	902.93	.42	.51	.00

df = 1,117 for each variable

* $p < .05$

** $p < .01$

The univariate analyses indicated significant differences between treatment groups with regard to cause/effect $F(4,114) = 15.16908$, $p < .01$ and main idea $F(4,114) = 4.28864$, $p < .05$. No significant differences were found between groups with regard to factual $F(4,114) = 2.59421$, $p > .05$ and terminology $F(4,114) = .42054$, $p > .05$.

The second hypothesis assessed the effectiveness of using an integrated language arts format for reading instruction on word-recognition performance. A one-way analysis of covariance, using pre- SORT scores as the covariate, was used to compare the post- SORT scores (i.e., raw scores) of the two treatment groups. A summary of this one-way analysis of covariance is shown in Table 6.

Table 6

Summary of One-Way ANCOVA Comparing Word-Recognition Performance Between Groups

Source	df	MS	F	p	Eta^2
SORT Raw Scores					
Between groups	1	39.20	.17	.681	.001
Within	118	230.16			

This one-way analysis of covariance resulted in the acceptance of hypothesis H^2 (i.e., no significant difference was found between the experimental groups in their word-recognition performance, $F(1, 118) = .17$, $p > .05$).

The third and fourth hypotheses examined the relation between fourth- and fifth-grade students scores on the Dyslexia Screening Instrument (DSI) and their pre-treatment reading comprehension scores as measured by the ARI and word-recognition scores as measured by the SORT. Pearson product-moment coefficients were used. The correlations for comprehension are presented in Table 7.

Table 7

Correlation Between the Dyslexia Screening Instrument Scores and Reading Comprehension Scores According to Text Type and Comprehension Type

Variables	DSI	Mean	SD	p
ARI				
Silent Narrative Text				
cause/effect	.00	8.34	26.81	.99
factual	.13	.45	1.97	.14
main idea	.05	7.23	24.92	.58
terminology	.06	4.91	20.05	.50
Silent Expository Text				
cause/effect	.07	1.57	10.17	.41
factual	.03	1.03	4.20	.75
main idea	.07	4.34	19.11	.43
terminology	-.08	.88	7.20	.38
Oral Narrative Text				
cause/effect	-.10	2.64	13.52	.50
factual	-.01	6.94	24.02	.78
main idea	.07	12.79	32.14	.61
terminology	-.12	.39	1.26	.14

Note: (N = 123)

Results of this comparison revealed no significant correlation between the students' scores on the DSI and their

reading comprehension performance scores on the ARI.

A summary of the comparison of students' scores on the DSI and their word-recognition scores on the SORT is presented in Table 8.

Table 8

Summary of the Relation Between the Dyslexia Screening Instrument Scores and Word-Recognition Scores

Variables	DSI	Mean	SD	p
SORT				
Word recognition	-.25	104.27	32.73	<.01**

** $p < .01$ Note: ($N = 123$)

A significant, negative correlation was found between scores on the DSI and the word-recognition scores on the SORT. This negative relation indicates that scores on the DSI were based primarily on word recognition performance.

The results of this study suggest several key findings. First, it was found that the integrated language arts format for reading instruction increased reading comprehension performance. Second, it was found that this instructional format had no significant effect on word recognition performance. Third, a relation was found between scores on the DSI and word-recognition performance; however, no relation was found between DSI scores and reading comprehension.

The students in this study were typical of the population of students who experience failure in school (Allington & Walmsley, 1995). Such students tend to be absent from school frequently, and when they are present they tend to arrive ill-prepared with little sleep, an inadequate breakfast, and without the necessary materials and preparation for completing their school assignments. These students face failure and its resulting ridicule every day. In many cases, they experience social and emotional burdens too heavy for young people to adequately handle and still manage the requirements of school.

Of the 84 boys and 39 girls in this study, 35 missed school on at least one of the 22 treatment days. Ten of the 35 students missed school on 2 treatment days, and 9 students missed between 3 to 7 treatment days.

Students with reading problems are also characteristically tardy which causes them to miss the prime, early morning, time that has been found to be most conducive to learning. Several of the participating students were tardy on a

regular basis, which seriously limited the amount of instruction time they experienced.

Another characteristic common to students who experience reading problems is that of transferring from school to school during the academic year. Quite often these students move so often that their school records do not arrive before they have moved again. This forces teachers to work with such students without knowledge of assessment data or other pertinent information contained in school records. Moving frequently also takes its toll on the student's social/ emotional well-being. They are constantly uprooted from friends and familiar teachers and forced to adjust to a new environment which includes home, school, teacher, and friends. In this study 7 of the original 130 students moved to other schools during the duration of the study.

Another failure-prone characteristic that is prevalent among students who exhibit difficulty in learning to read is limited parental support concerning education. Students' reading achievement or lack thereof is directly proportional to parental concern and involvement in the school. The parents of these students typically do not attend parent/teacher conferences, parent/teacher association meetings, nor assist in any way in their child's classroom. In fact, often these students have no way to contact parents during the school day for support, assistance, or even in case of emergency. This characteristic of poor readers was found to apply to the population of students in this study.

Another factor associated with low reading achievement, and which is directly influenced by the home environment, is the lack of motivation to read. Homes of problematic readers typically lack appropriate reading materials and other resources which encourage inquisitiveness and exploration, and create problem-solving scenarios. Such home environments actually exacerbate a low motivation for reading. Data collected from the Interest Reading Inventory, which was administered prior to treatment to provide information concerning the students' interests in reading for lesson planning, revealed that most of the students in this study have limited resources for reading in their homes.

It is also important to note that the majority of the students in this study would meet qualifications for a diagnosis of learning disability (especially dyslexia) based on their reading performance alone. They would qualify by the discrepancy formula criteria (i.e., reading performance which is 2 years or more below grade level). For the purpose of this study, the Total Normal Curve Equivalent Scores on the Iowa Test of Basic Skills (ITBS) were used to identify the population of students fitting this profile. From this population (i.e., students functioning, in most cases, two or more

years below grade level on ITBS), subjects were randomly selected. Students were also administered the DSI by their regular classroom teachers. Findings from this data revealed that 31 of the students in the study "failed" the DSI, indicating that based on this screening device, these students were diagnosed dyslexic. Another 23 students' scores fell into the category of "inconclusive," which may indicate that their reading ability was judged by their teachers to resemble that of a dyslexic reader.

In spite of the problematic characteristics exhibited among the students in this study, an ironic finding arose. Students' responses to one of the items on the Interest Reading Inventory (i.e., Do you like to read?) revealed that, of the 118 students responding to this item on the questionnaire, 88 students stated that they like to read; an additional 13 students stated they like to read sometimes; and only 17 students stated they do not like to read. This finding suggests that, in spite of the failure and frustration that poor readers experience daily in trying to read, these low-achieving students may still exhibit a positive attitude toward reading upon which teachers may capitalize.

This conclusion was also supported by the random responses of students who were not selected to be in the experimental group. Aware that students were meeting in the cafeteria on two mornings a week for reading instruction, a number of these students would congregate outside the door, sometimes accompanied by the school counselor, and ask if they could take the place of any student who was absent that day. One student asked the school counselor to try to assist her in replacing a student who had moved to another school. This finding also supports the notion that daily instructional variation is important in encouraging and maintaining positive attitudes toward reading.

The results of this study have strong implications for classroom teachers, preservice teachers, and parents, especially parents of students who experience difficulty in reading. Comprehension performance was found to increase in all four areas (i.e., cause/effect, factual, main idea, & terminology) for narrative text and in the areas of cause/effect and main idea for expository text; however, comprehension of factual information and terminology using expository text showed no significant increases. These findings indicate that using an integrated language arts format (i.e., integrating reading, writing, speaking, & listening in each lesson) for reading instruction may increase specific areas of comprehension performance.

The integrated language arts format used in this study consisted of one-on-one instruction focusing on the teaching of comprehension and vocabulary strategies using trade books from various genres. The fifty-minute lessons

integrated reading, writing, speaking, and listening in activities which used both narrative and expository text and united other areas of the curriculum (i.e., science, social studies, & math). For each lesson, vocabulary words were identified and taught in a variety of ways including Word Mapping, CLOZE Instruction, List-Group-Label, or Venn Diagrams, to mention a few. Comprehension strategies (i.e., DRTA, Semantic Feature Analysis, K-W-L, & ReQuest) which teach predicting, comparing/contrasting, and metacognition were incorporated into the lessons.

This finding, which indicated an increase in comprehension performance following the use of an integrated language arts format for reading instruction, suggests that teaching students how to use a variety of comprehension and vocabulary strategies as well as how to monitor their own learning may equip them with effective tools for constructing meaning. The very fact that using this format for teaching reading increased comprehension performance among students who exhibited severe reading problems may be an indication that it would be even more effective with students who have less severe reading problems (e.g., remediation), exhibit no reading problems at all (e.g., instruction), or are proficient readers (e.g., enrichment).

A closer examination of comprehension scores with regard to factual information and terminology of expository text (i.e., the two areas in which comprehension did not significantly improve during treatment) revealed that the posttest scores actually mirrored the pretest scores. In other words, these two areas were also the weakest comprehension areas for both grades prior to treatment. This finding suggests that factual information and terminology of expository text may be more difficult for problem readers to learn than identifying the main idea or cause and effect relations. One possible explanation of this finding may be that comprehension of factual information and terminology using expository text relies more heavily on conceptual and specific word knowledge than does any of the other comprehension areas using either text. This may imply that poor readers have not had the experiences which equip them with the necessary background knowledge of content area information and/or word knowledge (i.e., terminology) necessary to adequately supply meaning to expository text. Searfoss and Readence (1985) indicated that "a word is not an object or idea; rather, it is a symbol for our experiences" (p. 188).

It should be noted that the integrated language arts format used in this study consisted of explicit teaching and modeling of strategies for learning factual information and terminology. With this in mind, it is suggested that perhaps the degree with which the students in this study were deficient in these two areas of comprehension was such that more

instruction time was needed to remediate these areas of weakness. Another interesting finding related to these comprehension areas supports the notion that more remediation time was needed. Fourth graders' scores for comprehending factual information and terminology were higher than the fifth graders' scores on both the pretest and posttest. This finding may suggest that as students advance from grade to grade, in this case fourth grade to fifth grade, without intervention (i.e., adequate opportunities to remediate conceptual and word knowledge) these two areas of weakness may become even more pronounced and as a result become more difficult to remediate. It is further suggested that a delay in intervention may possibly exacerbate the reader's comprehension abilities in other areas because of the stifling effect this weakness may have on the reader's initiative to read.

These findings and suppositions suggest that it may take even longer to rehabilitate or remediate these specific comprehension abilities for students who are deficient in concept/word knowledge with regard to expository text than is required to improve comprehension of narrative texts. Consequently, if a reader is deficient in concept and word knowledge related to expository text, comprehending content area reading will become more and more deficient until the reader may never recoup the ability to comprehend such text. If this is the case, this finding may cast new light on what causes the differences between the common "garden variety" poor readers and the "hot-house hybrid" cases.

Students who experience reading deficiencies such as these involved in this study have spent considerable reading instruction time focusing on word recognition. This word-recognition instructional format, while increasing sight vocabulary, has done little to enhance comprehension, thus, causing students to fall further and further behind each year. Such readers, often identified as "poor readers" or "dyslexic" (i.e., inability to read) are diagnosed via word-recognition measures but are referred for testing due to inability to comprehend. Findings from this study suggest that an integrated format, providing students with hands-on experiences related to the concept being taught, enables them to make the necessary connections for knowledge acquisition and retention, thus enhancing meaning and ultimately improving word recognition. As stated earlier, however, the reverse is not plausible.

Several implications for teachers and preservice teachers may be derived from these findings. One of the main goals of reading instruction should be to develop concept knowledge as well as terminology acquisition of expository text (Searfoss & Readence, 1985). For students enrolled in grades 4 and 5, focusing solely on narrative text during reading instruction may seriously limit the numerous meaningful encounters with factual information and terminology

that are necessary in order for a reader to develop adequate concept and word knowledge. Anderson and Freebody (as cited in Searfoss & Readence, 1985) stated that "knowing a word is not an all-or-nothing proposition" (p. 188). One must "own" a word. Multiple-meaning words must be presented in appropriate context. Searfoss and Readence (1985) stated that terminology learning "should be taught directly and not left to incidental learning" (p. 189) and be taught in a variety of ways rather than by one method. It should also be situational, in other words, students should experience the words as well as encounter them repeatedly (i.e., reinforcement) in the materials they read. One of the most significant implications this notion has for the teaching of reading, specifically in grades 4 and 5, may be related to teacher attitude. According to Searfoss and Readence, the teacher's excitement and interest in words can be contagious and can stimulate student interest. In other words, the interest teachers convey in learning new words is directly related to the interest children will demonstrate in learning new words (Searfoss & Readence, 1985). Considering that a word knowledge deficiency may begin early on, Searfoss and Readence recommend that teachers not avoid "big" words with young children.

Findings also revealed that using an integrated language arts format for reading instruction did not significantly improve word-recognition performance. Several key factors may be responsible for this finding. First, it should be noted that in comparing the students' estimated grade levels based on comprehension with those of word recognition, the levels for word recognition were found to be significantly higher on both the pre- and posttest, suggesting that the students in this study decoded words better than they comprehended them. Within this study, the fourth-grade students' estimated grade levels on pretest for recognizing words extended as high as fifth, sixth, and seventh grade; whereas, fifth-grade students' estimated levels extended to sixth, seventh, and eighth grade. In comparison, their reading levels with regard to comprehension performance on the pretest were estimated to be two to three years below their actual grade levels. Considering that these fourth graders are in the final semester of fourth grade, they should be functioning at or near the fifth-grade level. In other words, 81.6 % of these second-semester fourth graders scored somewhere below third grade with regard to the instructional level for narrative text, and 85.7 % scored below third grade with regard to the instructional level for expository text. Data from the fifth grade (i.e., students who should be scoring at or near the sixth grade level) revealed that 83.3 % scored somewhere below fourth grade with regard to the instructional level for comprehension of narrative text and 90.3 % scored somewhere below fourth grade for the instructional level on

expository text. With this in mind, it is understandable that these students were able to decode the passages on the ARI more easily than they were able to comprehend them. It is also understandable that if the words students encountered during the treatment (i.e., reading lessons regardless of type) did not increase their repertoire of sight words from time of pretest (i.e., from 1 to 3 levels above grade level), less improvement in word recognition would be revealed by the posttest.

One explanation of this discrepancy between word-recognition and comprehension performance is that teachers may be placing too much emphasis on teaching word recognition at the expense of teaching strategies for gaining meaning from text. For instance, they may be emphasizing the bottom-up view of reading, which according to Heilman, Blair, and Rupley (1990), means that the reader uses the printed text to construct meaning rather than the top-down view whereby the readers start with hypotheses and predictions about what they are reading and use the printed text to verify them.

Also, if teachers perceive reading as *pronouncing words* rather than *constructing meaning*, they may not realize that more of the same (i.e., instruction which emphasizes word-recognition) will not increase comprehension performance. Over emphasis on reading the words, solely, eliminates the purpose for reading, which many authorities say is primary to comprehending text (Weaver, 1994a).

The notion of focusing on meaning is also supported by experts in the field of reading who state that it is more effective to concentrate instruction on teaching strategies for comprehension, and in so doing, allowing students to develop their stock of sight words as well as their precision in using the cueing systems to recognize words (Weaver, 1994a). Weaver stated that "context can help all readers identify or at least understand words they do not immediately recognize" (p. 161). Focusing on word recognition ignores the fact that many words are not critical to constructing meaning in the first place.

Implications for teachers and preservice teachers may be to focus more instructional attention on meaning so that performance in word-recognition and comprehension are more closely aligned. In this way, the meaning that emerges from the print (i.e. words) will contribute to the recognition of any words that are not immediately recognized. This repeated exposure to words in meaningful context will provide the practice necessary for these words to become apart of the students' stock of sight words.

This is not to say that teachers should avoid teaching word recognition. It merely means that students should be taught to recognize words in context rather than in isolation and not at the expense of teaching students to construct meaning.

The results of this study revealed no relation between scores on the DSI and comprehension performance; however, it was found that scores of "failed" on the DSI were associated with lower word-recognition scores on the SORT, indicating a relation between scores on the DSI and word-recognition performance.

It can be assumed that students who failed the DSI were the students who performed lowest in word recognition ability but were not necessarily the lowest scorers in comprehension performance. If this conjecture is correct, this instrument for diagnosing dyslexia only targets students who perform low in word-recognition ability without regard to comprehension; and therefore, places blame for reading deficiencies on word-recognition performance alone.

Discussion

Results of this study revealed that the integrated language arts format for reading instruction was more effective than the typical, traditional reading instruction for increasing reading comprehension performance using both narrative and expository text among fourth- and fifth-grade students who exhibit severe reading problems. The findings do not indicate that word-recognition performance was significantly effected by the integrated language arts format for reading instruction.

It was also revealed that students in this study were more efficient at comprehending main idea and cause and effect relations of expository texts and were less efficient at comprehending factual information and terminology specific to expository text. This finding suggests that students may benefit from genuine, first-hand experiences upon which to develop conceptual and word knowledge.

While this study consisted of a population specifically related to students exhibiting problems in reading, it is suggested that future research examine the effects of this instructional format on other populations such as students who do not exhibit reading deficiencies (i.e., normal readers and proficient readers) and younger students who are functioning within the early reading or emergent reader range.

For the students in this study, it appears that the primary instructional emphasis in reading prior to treatment

may have been on word recognition alone. This notion is evidenced by the finding which revealed that students could recognize words 1 to 3 years above their grade level, yet they were unable to comprehend text 2 to 3 years below their grade level. This finding suggests that an instructional tendency toward focusing attention primarily on word recognition may exist.

Students in this study performed better at recognizing words than they did at comprehending text. This finding supports the contention that word recognition is overemphasized in reading instruction in American schools. Perhaps a closer look at instructional practices used to teach reading is in order.

Finally, it appears that the DSI, which is used primarily to target students who are suspected of having dyslexia, bases this diagnosis on one's ability to recognize words alone. It is recommended that further examination of the relation between the DSI and word-recognition and comprehension performance using other populations of students be conducted.

A significant relation was found between scores on the DSI and word-recognition performance; however, a relation was not found to exist between scores on the DSI and reading comprehension performance. This may indicate that the identification of dyslexia by the DSI is based on the assumption that reading is merely word recognition.

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